

In the CLAIMS:

Please cancel claims 2, 19 and 20 without prejudice.

Please add claim 29 shown below in clean form only.

Please amend claims 1 and 3; 11 and 12; 18; 23, 24, and 25; and 26, 27 and 28. These are shown below in both marked up and clean form.

Clean Form

1. (amended) A puncture and cut resistant material comprising:

 a plurality of substantially spherical macrospheres, each macrosphere comprising:

 a plurality of substantially spherical microspheres; and

 a polymer surrounding and aggregating the microspheres together to form the substantially spherical macrosphere.

3. (amended) The puncture and cut resistant material of claim 1 further comprising for each of the plurality of macrospheres:

 a plurality of capture devices, each capture device comprising an area between adjacent microspheres and the polymer surrounding the adjacent microspheres; and

 wherein the plurality of microspheres and surrounding polymer create a plurality of capture devices surrounding the macrosphere; and

 wherein each capture device is adapted to capture a point of an invading sharp instrument.

11. (amended) A puncture and cut resistant material comprising:

 a plurality of substantially spherical macrospheres, each macrosphere comprising:

 a substantially spherical porous structure having a porous surface comprising a plurality of random pores; and

 a polymer coating over the porous structure;

 wherein the polymer coating over the porous structure forms a substantially spherical macrosphere having a

substantially smooth surface.

12. (amended) The puncture and cut resistant material of claim 11 further comprising for each of the plurality of macrospheres:

a plurality of capture devices, each capture device comprising:

one of the plurality of random pores and the polymer coating over the random pore;

wherein each capture device is adapted to capture a point of an invading sharp instrument.

18. (amended) A puncture and cut resistant surgical glove comprising:

a plurality of overlaying arrays of adjacent substantially spherical macrospheres, each macrosphere having a plurality of capture devices, each capture device adapted to capture a point of an invading sharp instrument;

wherein each substantially spherical macrosphere having a plurality of capture devices comprises:

a plurality of microspheres; and

a polymer surrounding and aggregating the microspheres together;

wherein each capture device comprises an area between adjacent microspheres and the polymer surrounding the adjacent microspheres;

wherein the plurality of microspheres and surrounding polymer create a plurality of capture devices surrounding the macrosphere; and

wherein each capture device is adapted to capture a point of an invading sharp instrument; and

an elastomer encapsulating the plurality of overlaying arrays of adjacent macrospheres.

23. (amended) A method of producing a puncture and cut resistant material comprising the steps of:

 forming a plurality of substantially spherical macrospheres, each macrosphere having a plurality of capture devices, each capture device adapted to capture a point of an invading sharp instrument; and

 injecting the macrospheres and an elastomer into an injection mold.

24. (amended) The method of claim 23 for producing a puncture and cut resistant material wherein the steps of forming a plurality of substantially spherical macrospheres comprises the steps of:

 spraying droplets of molten alumina;
 cooling the droplets to form microspheres;
 spraying droplets of a solution of microspheres and liquefied polyethylene; and

 cooling the droplets to form macrospheres, each macrosphere comprising aggregated microspheres coated with polyethylene.

25. (amended) The method of claim 23 for producing a puncture and cut resistant material wherein the steps of forming a plurality of substantially spherical macrospheres comprises the steps of:

 spraying droplets of molten alumina and a second material that volatizes at a lower temperature than the alumina;

 cooling the droplets to form porous macrospheres;
 tumbling the porous macrospheres with an abrasive to open up the surface and remove any intact surface film of alumina;

 spraying droplets of a solution of porous macrospheres and liquefied polyethylene; and

 cooling the droplets to form polyethylene coated porous

macrospheres; and

wherein when the second material volatizes at the lower temperature, bubbles are formed in the droplets forming the porous macrospheres.

26. (amended) A method of producing a puncture and cut resistant material comprising the steps of:

forming magnetically sensitive substantially spherical macrospheres, each macrosphere having a plurality of capture devices, each capture device adapted to capture a point of an invading sharp instrument;

dipping a former comprising electro-magnetic elements into a solution of the magnetically sensitive macrospheres and an elastomer; and

activating the electro-magnetic elements;

whereby activating the electro-magnetic elements draws the magnetically sensitive macrospheres onto surfaces of the former.

27. (amended) The method of claim 26 for producing a puncture and cut resistant material wherein the steps of forming substantially spherical magnetically sensitive macrospheres comprises the steps of:

spraying droplets of molten alumina comprising a magnetically sensitive material;

cooling the droplets to form microspheres;

spraying droplets of a solution of microspheres and liquefied polyethylene; and

cooling the droplets to form macrospheres, each macrosphere comprising aggregated microspheres coated with polyethylene.

28. (amended) The method of claim 26 for producing a puncture

and cut resistant material wherein the steps of forming substantially spherical macrospheres comprises the steps of:

spraying droplets of molten alumina comprising a magnetically sensitive material and a second material that volatizes at a lower temperature than the alumina;

cooling the droplets to form porous magnetically sensitive macrospheres;

tumbling the porous magnetically sensitive macrospheres with an abrasive to open up the surface and remove any intact surface film of alumina;

spraying droplets of a solution of porous magnetically sensitive macrospheres and liquefied polyethylene; and

cooling the droplets to form polyethylene coated magnetically sensitive porous macrospheres;

wherein when the second material volatizes at the lower temperature, bubbles are formed in the droplets forming the porous magnetically sensitive macrospheres.

29. (new) The puncture and cut resistant material of claim 17 wherein the elastomer encapsulated first, second, and third arrays of adjacent macrospheres form a puncture resistant surgical glove.